

Intraday electricity price forecasting (topic presentation)

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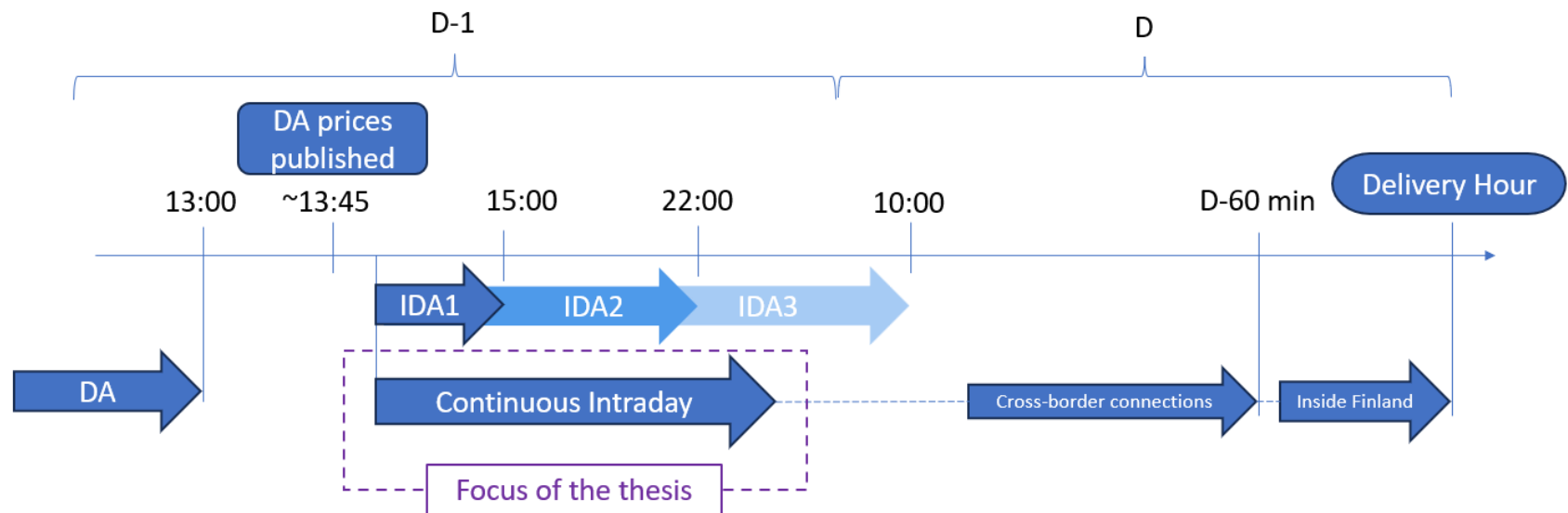
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Työn saa tallentaa ja julkistaa Aalto-yliopiston avoimilla verkkosivuilla. Muilta osin kaikki oikeudet pidätetään.

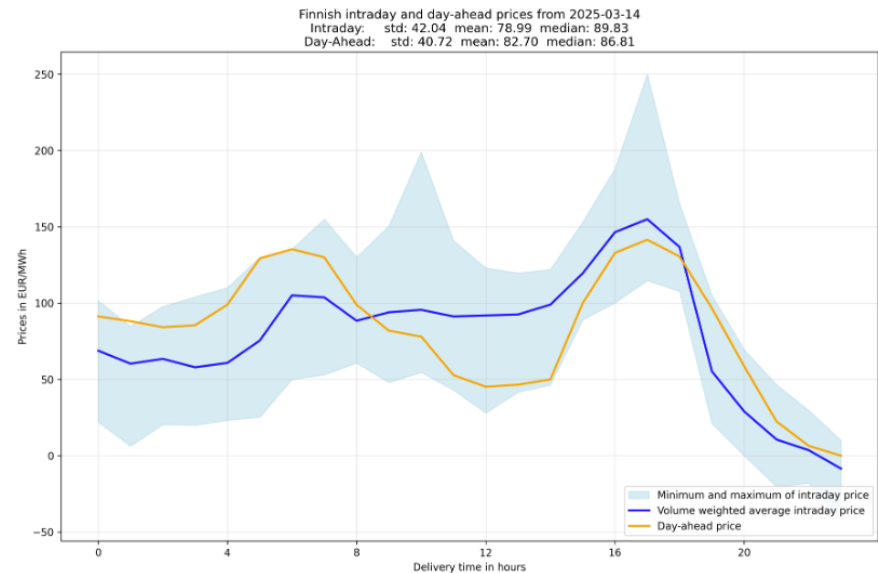
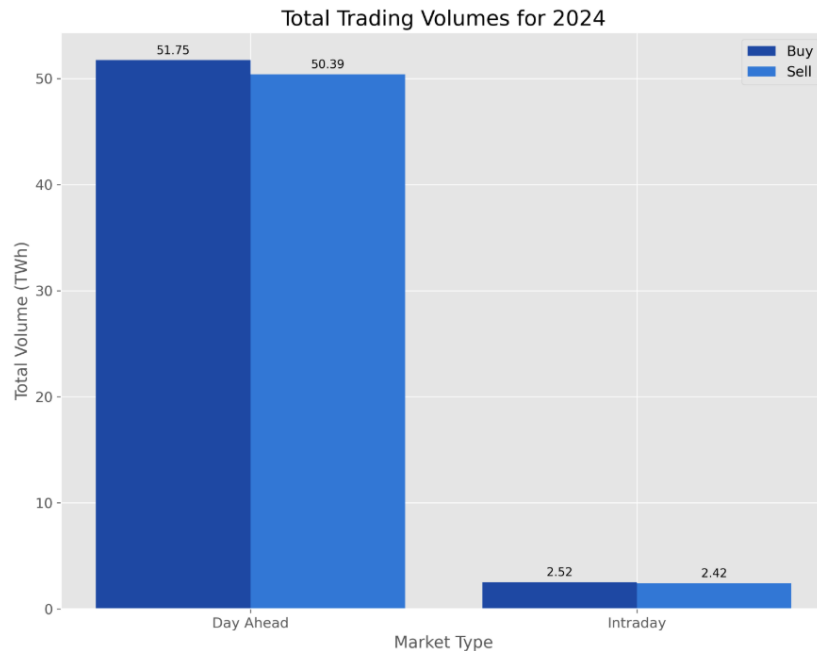
Intraday markets are a platform for day-ahead forecast correction and trading

- Additional markets to day-ahead markets to buy and sell electricity
- Intraday market participation is driven by the need to correct day-ahead forecast errors and to exploit short-term trading opportunities.
- The participants will have to pay additional costs if they don't produce or consume the electricity that they have promised in the day-ahead markets

Intraday trading operates in three auctions and a continuous market



Intraday market in Finland is still small but volatile market compared to day-ahead



Objective

- Study and analyse which features affect the intraday prices
- Forecast the ID3 price (volume weighted average price for the last three hours) using at least couple of models
- Evaluate and compare the models with a naive model

Methods

- Extreme Gradient Boosting (XGBoost), tree ensemble model
 - Used as a simpler machine learning model
- Long Short-Term Memory (LSTM), a type of artificial recurrent neural network model
 - Used as a more complex model to challenge XGBoost
- Naive approach, uses historical values to predict the prices
 - Used as a reference model

Schedule

- Getting relevant data and familiarize with the topic 02/2025-03/2025
- Topic presentation 04/2025
- Finish modelling 04/2025-05/2025
- Write the thesis 05/2025
- Second presentation 05/2025

Sources

- Nord Pool. Market Data API. https://data-api.nordpoolgroup.com/index.html#/Intraday/get_api_v2_Intraday_Trades_ByDeliveryStart
- Nord Pool. [nord-pool-sidc-gate-opening-times-gate-closing-times.pdf](#)
- Nord Pool Support. About the SIDC Intraday Auctions (IDAs).
<https://support.nordpoolgroup.com/support/solutions/articles/8000111575-about-the-sidc-intraday-auctions-idas->